

ABSTRACT OF THE DISCLOSURE

A new methodology is disclosed to convert analog electric signals into digital data. The method provides a serial scheme without pre-definition of the number of bits (dynamic range). It allows digital processing of the input signal without sampling and holding of the input signal. Processing of the input signal is clock-less and asynchronously dependent on the time-evolution of the input signal itself. Thereby, a programmable, dynamic adjustment of bandwidth (product of dynamic range and speed of conversion) of the analog-to-digital conversion process can be achieved depending on the characteristics of the input signal. Dynamic adjustment of the bandwidth is accomplished by digitally controlling a "threshold" value at the input capacitor of the comparator, which when met by the input signal, triggers a transition at the output of the comparator.